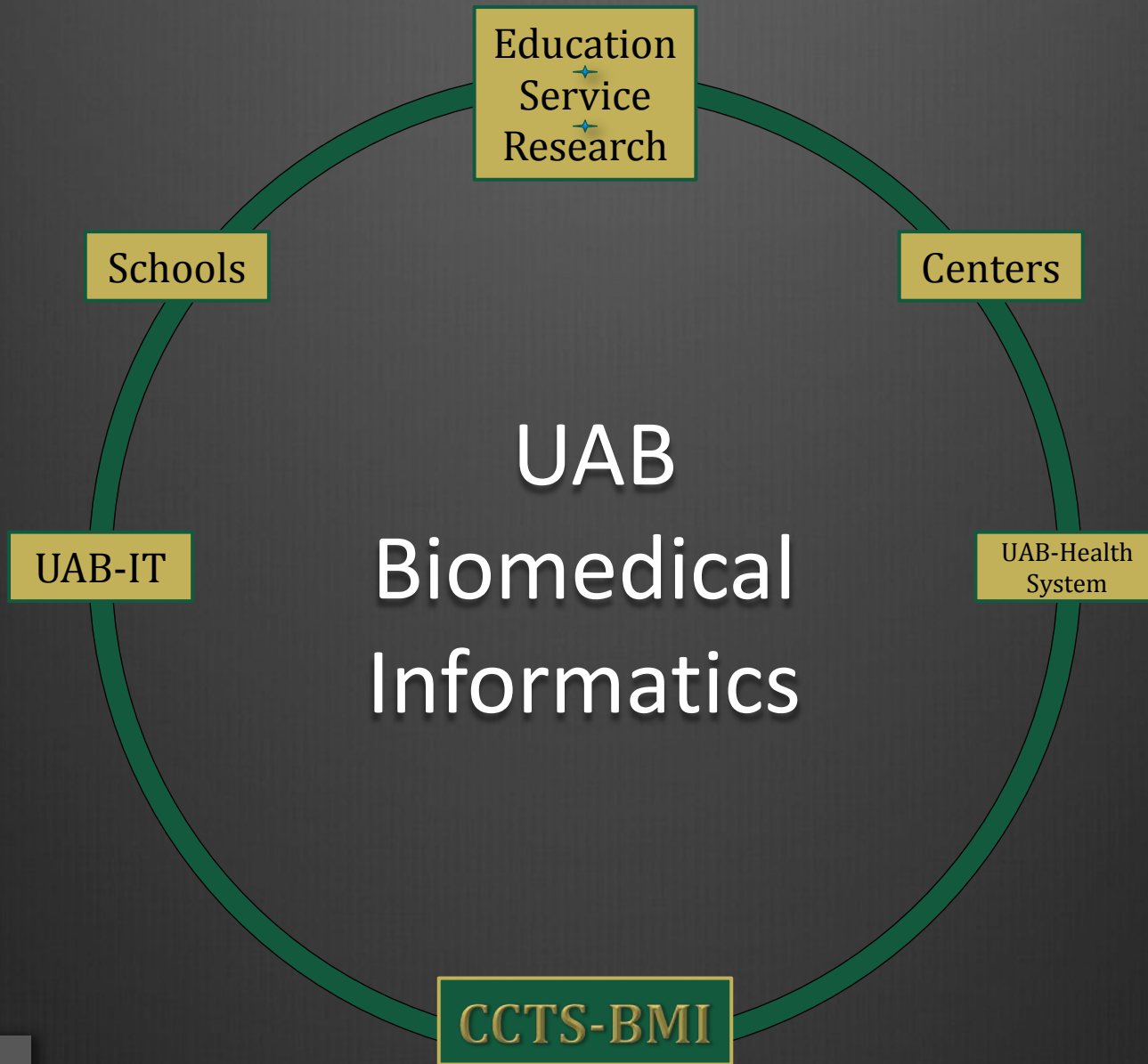


Biomedical Informatics

A Partnership for UAB



CCTS Biomedical Informatics Component (BMI)

➤ Leadership

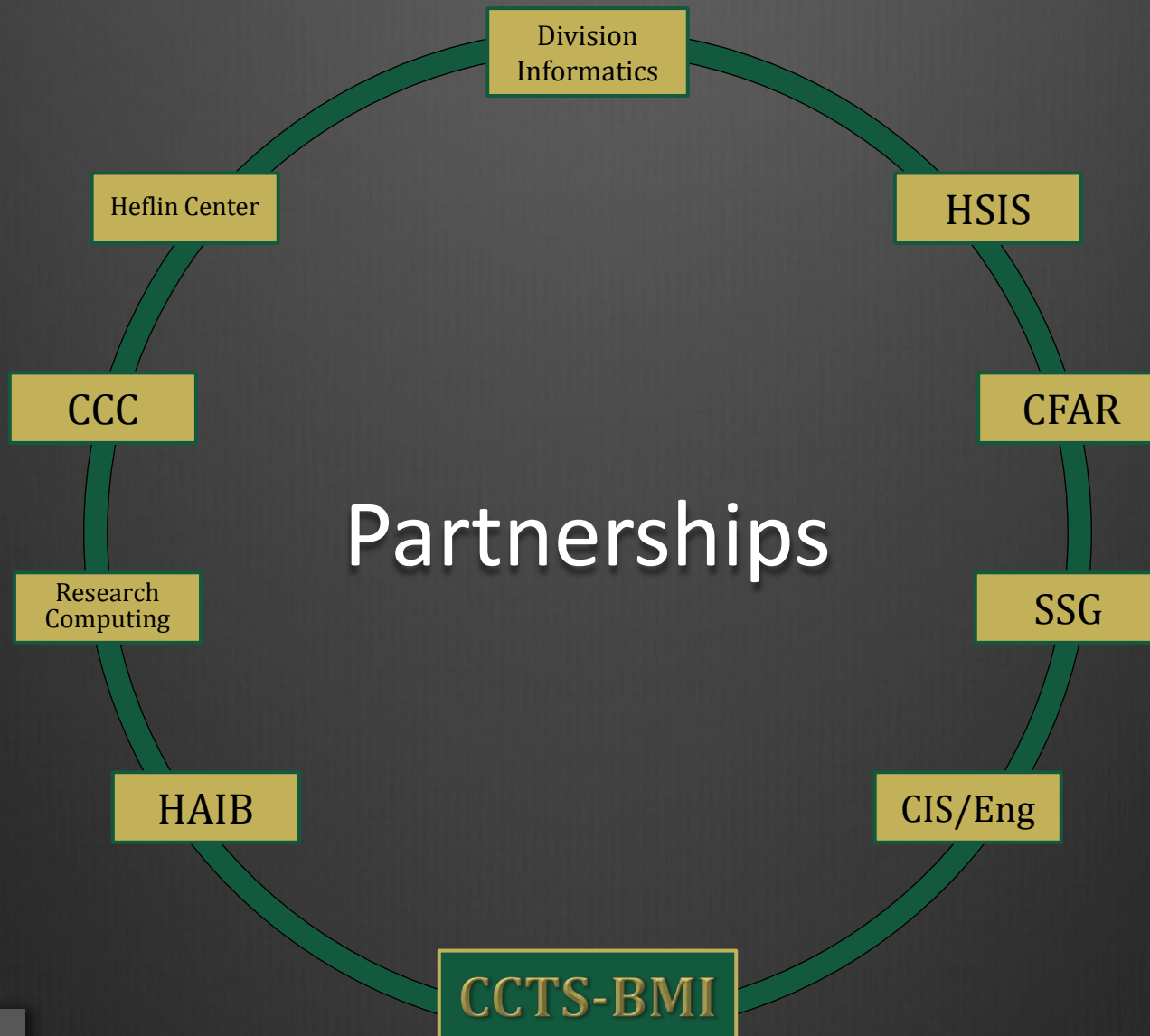
- Elliot Lefkowitz, Director
- Eta Berner, Co-Director
- Jonas Almeida, Co-Director
- Matt Wyatt, Assistant Director

➤ Staff

- Bioinformaticians: David Crossman, Curtis Hendrickson, Ranjit Kumar, John Osborne
- System Analysts: Keith Bobitt, Don Dempsey, Nivi Totha



<http://bioinformatics.uab.edu>



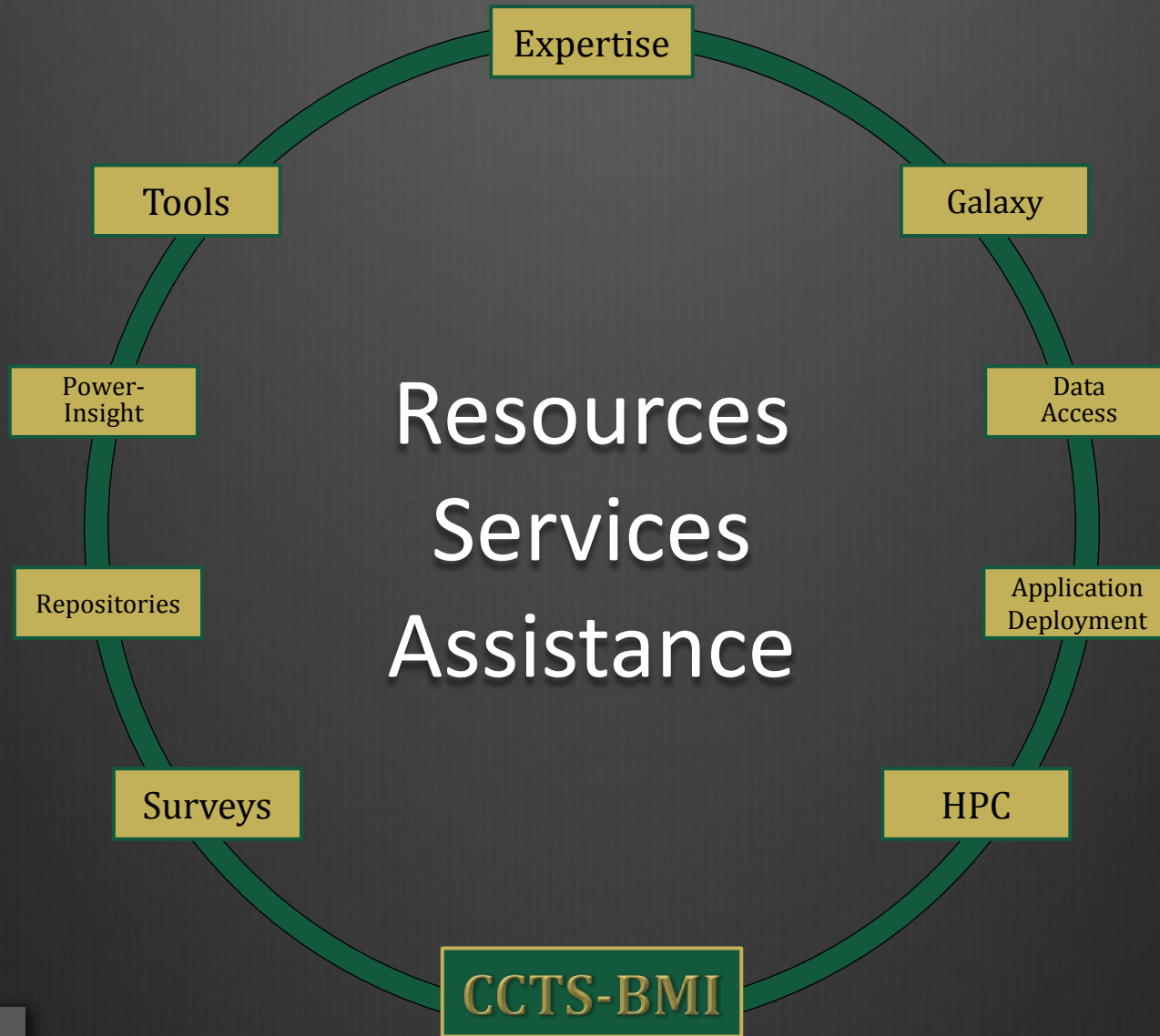
Heflin Center for Genomic Sciences Core Laboratories

Molly Bray, PhD
Michael Crowley, PhD
David Crossman, PhD

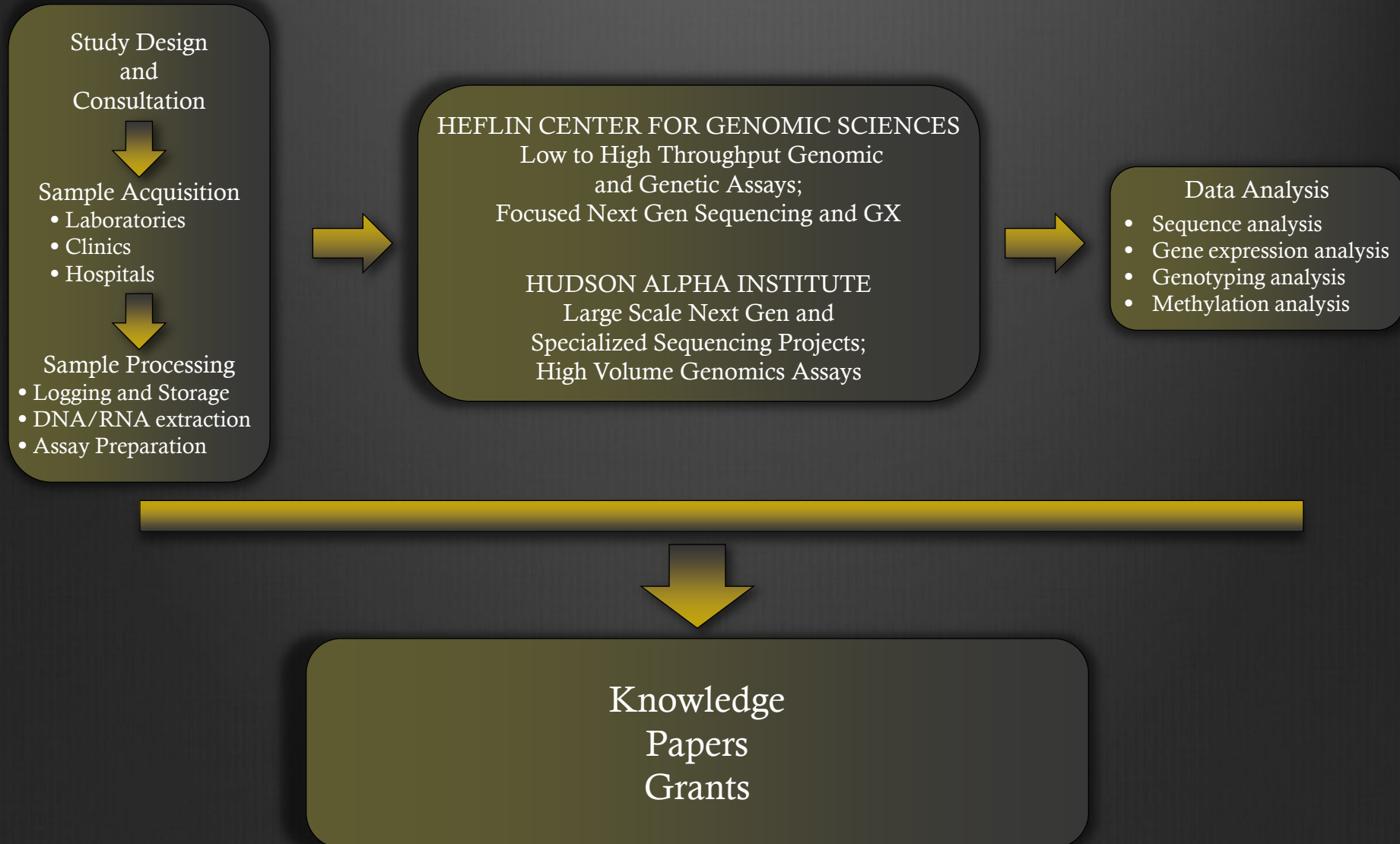
Next Generation Sequencing

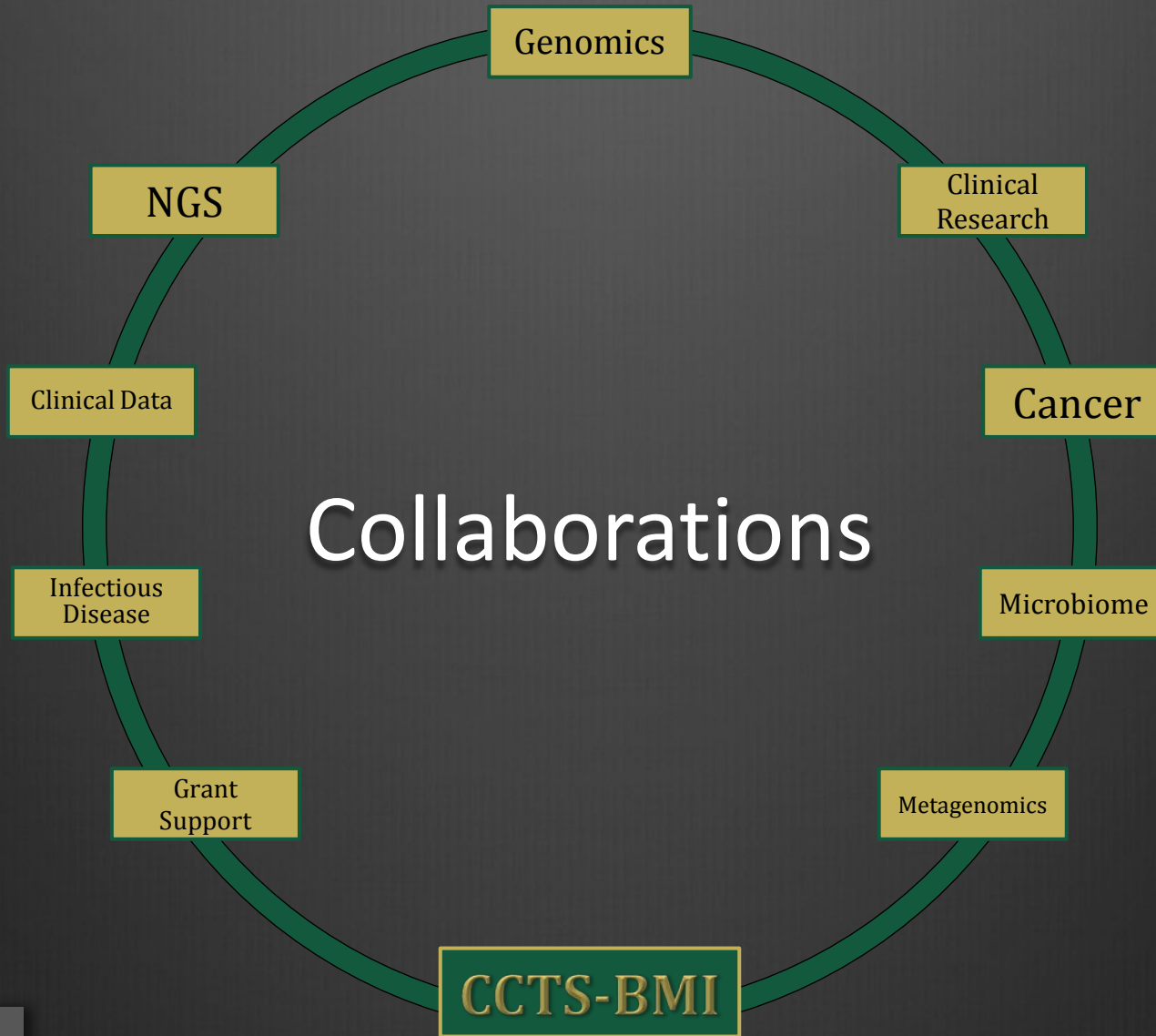
- The Heflin Genomics Core in association with The Stem Cell Institute will offer NGS on two platforms.
- HiSeq2000
 - The HiSeq2000 can produce ~200billion bases (Gb) of sequence per run
- GAIIx
 - The GAIIx can produce up to 95billion bases (Gb) of sequence per run
- NGS Assays include:
 - RNA-Seq
 - ChIP-Seq
 - Exon capture and Sequencing
 - Targeted Resequencing
 - Whole Genome Sequencing
 - Microbiome
 - Methyl-Seq





Genomics Pipeline at UAB





Microbes in Extreme Cold Ecosystems: Diversity, Ecosystem Functioning and Bioprospecting

Jonathan Huang and Asim Bej, UAB Department of Biology; Ranjit Kumar, Elliot Lefkowitz, UAB Department of Microbiology; Mike Crowley, UAB Hefflin Genomics Center; Dale Andersen, SETI Institute, CA

Dronning Maud Land



Antarctica



McMurdo Dry Valleys

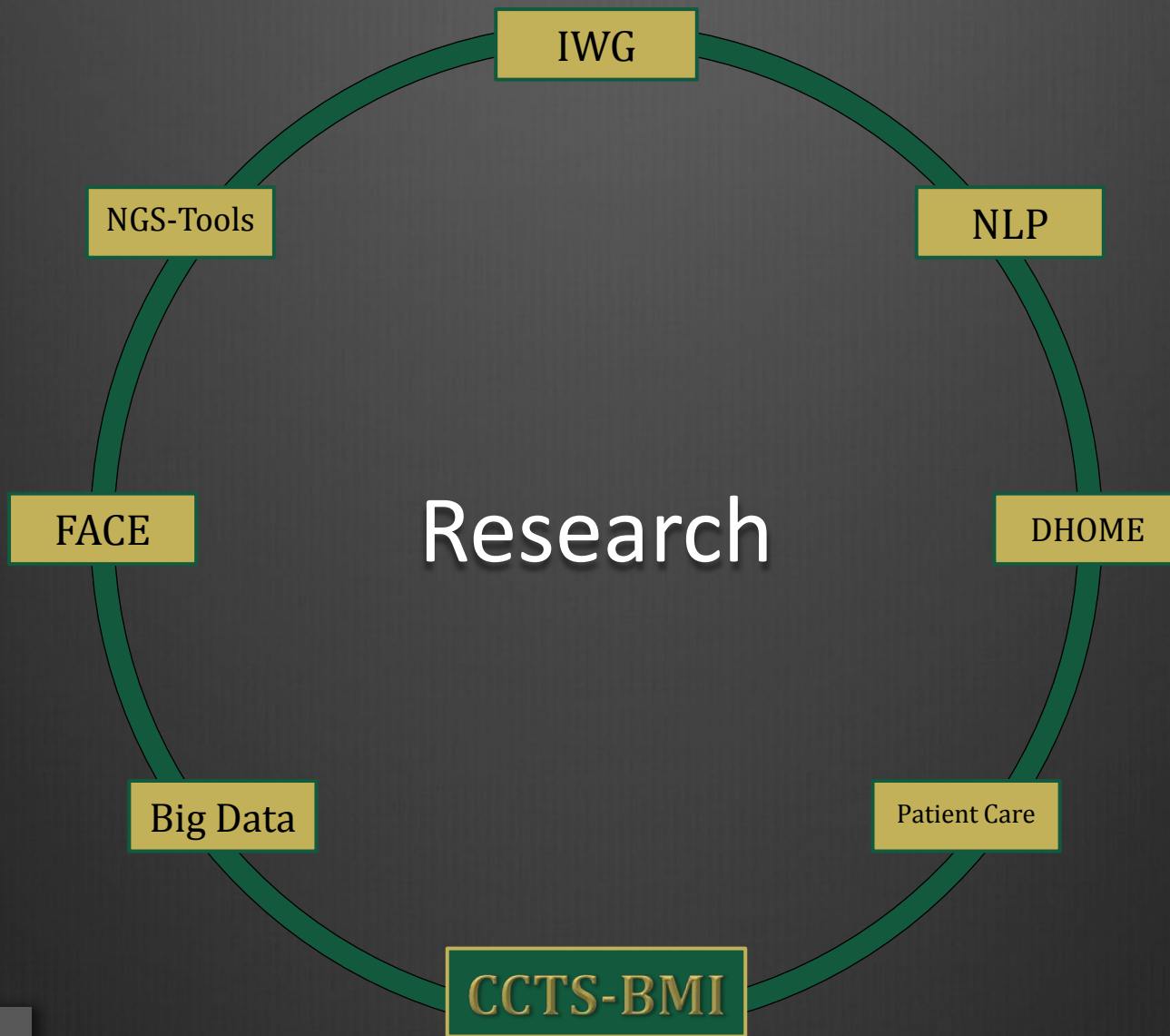


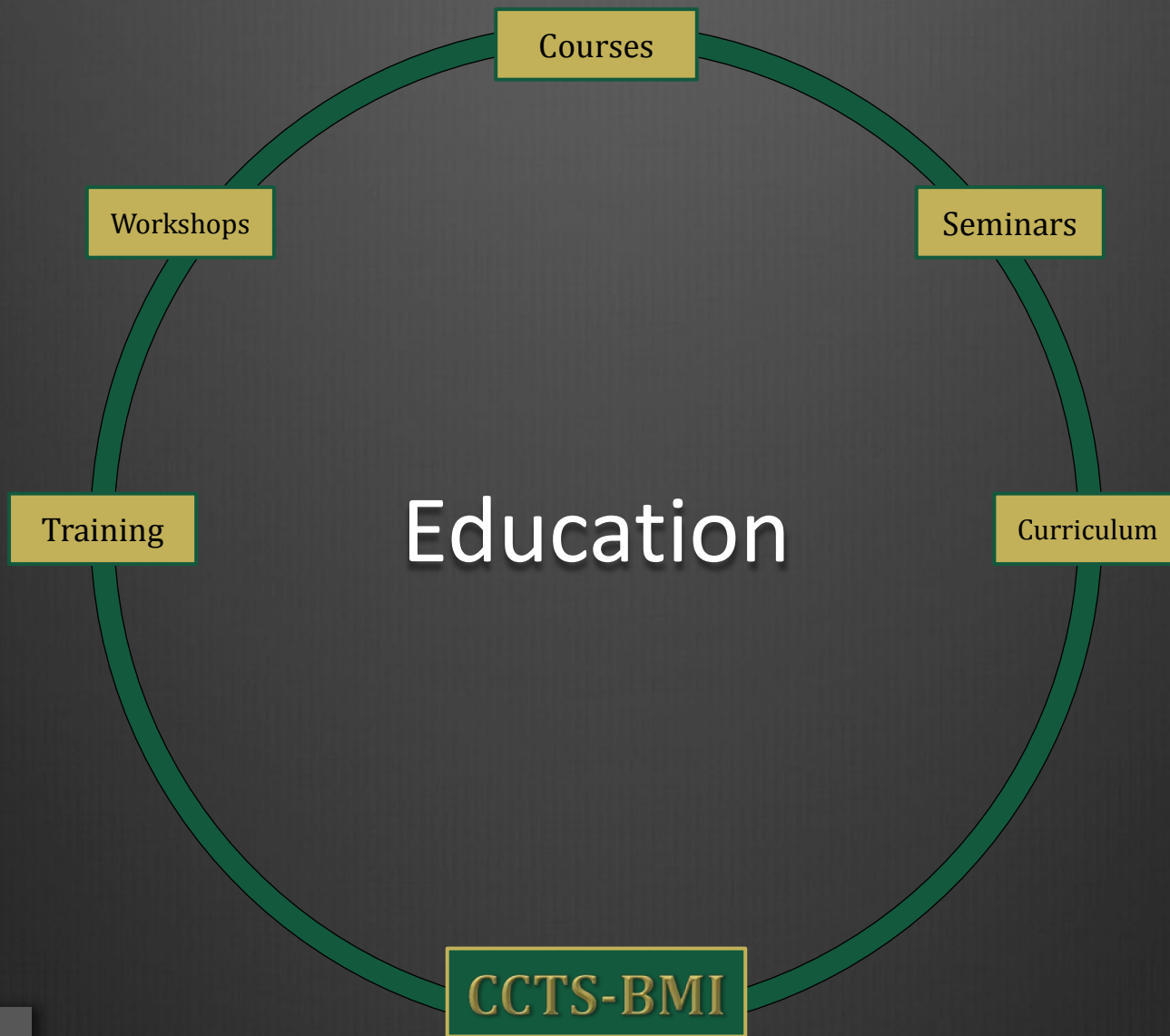
Arctic: Wolf Diapir Springs



OBJECTIVES:

- **Illumina sequencing:** Analyze genomic potential of the identity and function of microbes in Arctic and Antarctic perennially ice-covered freshwater lakes.
- **Comparative Metagenomics:** Deciphering potential biogeochemical cycling (*N, S, P, C, Fe*) and ecosystem functioning (*metabolic genes*) within and between these lakes.
- **Bioprospecting:** Mining enzymes and secondary metabolites for biomedical and pharmaceutical products.





UAB Biomedical Informatics Resources and Assistance

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- Heflin Center
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- Department of Pathology Division of Informatics
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- Comprehensive Cancer Center (CCC) Biostatistics and Bioinformatics
 - Karan Singh, Ph.D.
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- Microbiome Core Facility
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